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An alternative form of retro-reflector 13' known as a cat's-eye, is shown in Figure 5. This is useable in place of the corner cube retro-reflector 13. The cat's-eye 13' comprises a lens 131 and a mirror 132 placed at a distance for the lens 131 equal to its focal length, f. Conveniently, the lens 131 is formed in the carved front surface of a single transparent body 133 which has a plane rear surface 134 that is selectively silvered to form mirror 132.

See the attached Appendix for the changes made to effect the above paragraph

IN THE CLAIMS:

Please amend claims 8, 9 and 12 as follows:

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8. (Twice Amended) Apparatus according to claim 4 wherein said retro-reflector comprises a trapezoid form of a material transparent to said radiation and having three mutually perpendicular surfaces meeting at a corner, said three surfaces being provided with a reflective coating.

9. (Twice Amended) Apparatus according to claim 4 wherein said retro-reflector comprises a convergent lens and a reflective surface, said reflective surface being spaced a distance from said lens equal to the focal length of said lens.

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12. (Twice Amended) A method of manufacturing a device comprising:
providing a substrate provided with a radiation-sensitive layer to an object table;
providing a projection beam of radiation using an illumination system;
patterning the projection beam to form a pattern in its cross section; and
projecting the patterned beam onto said target portions of said substrate;
determining a reference position of said object table relative to a reference frame by:
emitting radiation from a radiation source mounted on said reference frame toward a
mirroring device mounted on said object table;
reflecting the radiation; and
detecting the reflected radiation in a two-dimensional radiation detector mounted in a
fixed position on said reference frame.

Please add claim 17 as follows:

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17. (New) A lithographic projection apparatus, comprising:
- a projection beam illumination system which supplies a projection beam of radiation;
 - a first object table to hold a projection beam patterning device which patterns the projection beam according to a desired pattern;
 - a second object table to hold a substrate;
 - a projection system which images the patterned beam onto a target portion of the substrate;
 - a reference frame; and
 - a position detecting device comprising:
 - a radiation source mounted on one of said object tables;
 - a two-dimensional radiation detector mounted in a fixed position; and
 - a mirroring device that is movable relative to the reference frame so as to reflect radiation emitted by said radiation source toward said radiation detector.

See the attached Appendix for the changes made to effect the above claim(s).